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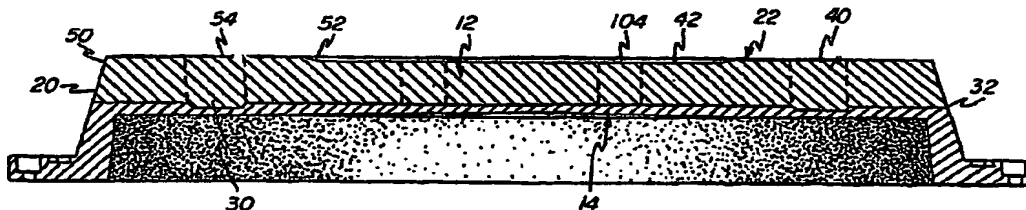
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- (71) Applicant (for all designated States except US): **TOSOH SMD, INC.** [US/US]; 3600 Gantz Road, Grove City, OH 43123 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **BAILEY, Robert, S.** [US/US]; 1493 Trail Court, Grove City, OH 43123 (US). **HOLCOMB, Melvin, K.** [US/US]; 2205 Buttercup Lane, Grove City, OH 43123 (US).
- (74) Agents: **ELLSWORTH, Jeffrey, S. et al.**; Wegman, Hessler & Vanderburg, 6055 Rockside Woods Boulevard, Suite 200, Cleveland, OH 44131 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): **AB, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.**
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(54) Title: **SPUTTERING TARGET ASSEMBLY HAVING LOW CONDUCTIVITY BACKING PLATE AND METHOD OF MAKING SAME**



(57) Abstract: A target and backing plate assembly and method of making the same. The backing plate is made of a material having an electrical conductivity less than or equal to 45 % IACS and is selected from the group consisting of Al alloys, Cu alloys, magnesium, magnesium alloys, molybdenum, molybdenum alloys, zinc, zinc alloys, nickel and nickel alloys.

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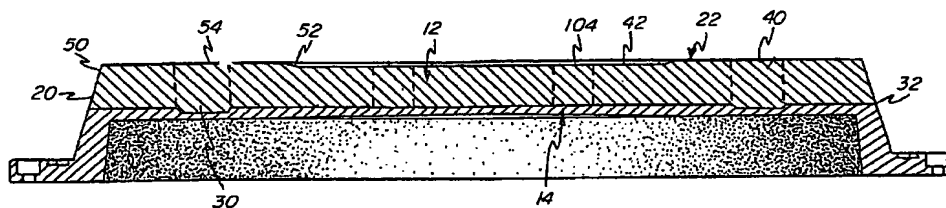
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(54) Title: SPUTTERING TARGET ASSEMBLY HAVING LOW CONDUCTIVITY BACKING PLATE AND METHOD OF MAKING SAME



(57) Abstract: A target and backing plate assembly (10) and method of making the same. The backing plate (14) is made of a material having an electrical conductivity less than or equal to 45 % IACS and is selected from the group consisting of Al alloys, Cu alloys, magnesium, magnesium alloys, molybdenum, molybdenum alloys, zinc, zinc alloys, nickel and nickel alloys. The target (12) is bonded to the backing plate (14).

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/22615

A. CLASSIFICATION OF SUBJECT MATTER IPC(7) : B21D 39/03; C23C 14/34 US CL : 29/428; 204/298.12 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) U.S. : 29/428; 204/298.12, 298.13 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) Please See Continuation Sheet		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- A	US 5,947,053 A (BURNHAM et al.) 07 September 1999 (07.09.1999). See column 4, lines 58-67.	10, 11 ----- 1-9, 12
X --- A	US 6,085,966 A (SHIMOMUKI et al.) 11 July 2000 (11.07.2000). See Figure 1 and column 4, lines 4-31.	10, 11 ----- 1-9, 12
X --- A	US 2003/0014140 A1 (NAKAJIMA et al.) 16 January 2003 (16.01.2003). See Figure 7 and page 1, paragraphs [0002] and [0003].	10, 11 ----- 1-9, 12
X --- A	US 6,330,013 B1 (KASHIWAYA et al.) 11 December 2001 (11.12.2001). See Figure 4 and column 14, lines 17-22.	10, 11 ----- 1-9, 12
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents:		
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	
"P" document published prior to the international filing date but later than the priority date claimed		
Date of the actual completion of the international search 11 January 2005 (11.01.2005)	Date of mailing of the international search report 09 FEB 2005	
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230	Authorized officer David P. Bryant Telephone No. 703-308-1146 <i>Sheikh H. Veney</i> Patent Specialist Tech. Center 3700	

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PCT/US04/22615

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — A	US 5,282,943 A (LANNUTTI et al.) 01 February 1994 (01.02.1994). See Figure 1; column 3, lines 12-17; and column 4, lines 15-18.	10, 11 — 1-9, 12
X — A	US 4,597,847 A (BOYS) 01 July 1986 (01.07.1986). See Figure 4A and column 7, lines 12-25.	10, 11 — 1-9, 12

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International application No.

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Continuation of Item 4 of the first sheet:

The title is too long. The new title is as follows:

Sputtering Target Having Low Conductivity Backing Plate

Continuation of B. FIELDS SEARCHED Item 3:

EAST BRS

search terms: sputtering target, conductivity, backing plate